SAMPLE PROGRAM INTRODUCTION

This sample Program Introduction (PI) is provided for the reference and guidance of first-time range users. The information in this PI is for a fictional launch vehicle and is only intended to help customers understand the type of information that should be included in their documentation. Wording in italics is data for the fictional launch vehicle, and should be replaced by data from your specific program. Explanatory information is provided in brackets, [ ], or highlighted in yellow to clarify or expand on topics.

The Program Introduction is the first document submitted to the range that specifies the types of support your program will need. It helps us to understand the scope of your program and determine whether our Wing has the resources necessary to support you. Web-based instructions on preparing Universal Documentation System documents, including the PI, are available at http://www.wsmr.army.mil/RCCsite/Pages/Publications.aspx. A complete description of the 45 SW documentation process is outlined in 45 SW Instruction 99-101 – a copy can be provided to you.

After the PI has been submitted, it will be reviewed by all Wing agencies, and we will respond to you with a Statement of Capability (SC). This SC will provide the following:

- Notification that the Wing will accept or not accept your program
- Questions concerning any information you provided in your PI
- Identification of any of your requirements that the Wing cannot support
- Identification of any further documentation that will be required from you

The PI is a preliminary range document, and as such, we realize that you many aspects of your program may not yet be finalized. If a certain support requirement is still uncertain, you may indicate that item is “TBD”, and will be supplied at a later date.

Your Wing Planning Engineer will be available to assist you during your preparation of the PI. He or she will be available to answer any questions you may have, and can also review your draft PI to uncover potential issues before your documentation is formally submitted.

We look forward to supporting your program at Cape Canaveral Air Force Station!

PROGRAM TITLE: ***ROAD-RUNNER ROCKET***
DOC TYPE / NO.: PI **REVISION: 00** **DATE:** ***1 Jan 15***

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1000 - ADMINISTRATIVE

PROGRAM TITLE: *Road-Runner Rocket*

SHORT TITLE: *RRR or R^3*

RESPONSIBLE AGENCIES & KEY PERSONNEL:

Requesting Agency: *ACME Launch Industries*
Requesting Agency Project Representative: *Mr. John Q. Customer*
Contractor / Representative: *N/A*
Lead Support Agency / Representative: *N/A*
Other Support Agencies: *ACME Payloads*

PROGRAM IDENTIFICATION INFORMATION:

Beginning Date: *01 Apr 13*
First Test Date: *1Q 2015*
Completion Date: *Open*
Pgm / Proj No. : *N / A*
Contract No. : *N / A*
DOD Element No.: *N / A*
Type of Program: *Commercial Launch*
MIL Precedence: *N/A*
Priority No. : *N / A*
Program Status: *Proposed*

REQUESTING AGENCY APPROVAL:

SIGNATURE:_____
NAME / TITLE: *JOHN Q. CUSTOMER, PRESIDENT, ACME LAUNCH INDUSTRIES, INC.*
AGENCY: *ACME INDUSTRIES*
PHONE / DATE: *(800) 888-8888 / 1 Jan 15*

LEAD SUPPORT AGENCY RECEIPT:

SIGNATURE: _____
NAME/TITLE: Thomas A. Eye, Director Plans and Programs
AGENCY: 45 SW/XP

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1000 - ADMINISTRATIVE (CONT'D)

ENVIRONMENTAL REQUIREMENTS:
As required by Public Law 91-190, The National Environmental Policy Act, and DOD Directive 6050.1, an:

Environmental Assessment Has ( ) Has Not (*X*) Been made.
Environmental Statement Is ( ) Is Not ( ) Required.
Environmental Statement Has ( ) Has Not (*X*) been prepared.

An Environmental Baseline Survey (EBS) is required and is being assigned to a Contractor.

Your Wing Planning Engineer can help you determine what environmental documentation is required for your program. You have the option of hiring an independent contractor to perform this survey, or requesting the 45 SW to perform the survey using its resources. Your Wing Planning Engineer can provide further guidance on these options.

CONTRACT TERMS:
State any Contract terms which specify the quantity, quality or timeliness of services to be provided by the support Agency. (If none, state "None").

NONE

CERTIFICATION:
The requesting agency certifies that the support requested herein is required for conduct of the test program and are not within any current approved scope of work except as follows:

N/A

1050 – ABBREVIATIONS AND ACRONYMS

AFS	AIR FORCE STATION
AFSPCMAN	AIR FORCE SPACE COMMAND MANUAL
CCAFS	CAPE CANAVERAL AIR FORCE STATION
CEP	CIRCULAR ERROR PROBABLE
DB	DECIBELS
EBS	ENVIRONMENTAL BASELINE SURVEY
FTS	FLIGHT TERMINATION SYSTEM
GHe	GASEOUS HELIUM
GN_2	GASEOUS NITROGEN
HTPB	HYDROXYL TERMINATED POLYBUTADIENE
IMU	INERTIAL MEASUREMENT UNIT
ITL	INTEGRATE, TRANSFER, LAUNCH
NOTAM	NOTICE TO AIRMEN AND MARINERS
PCM	PULSE CODED MODULATION
RF	RADIO FREQUENCY
RRR	ROAD RUNNER ROCKET
SCB	SIGNAL CONDITIONING BOX

1100 - PROGRAM DESCRIPTION

1120 - SYSTEM FUNCTIONAL DESCRIPTION

The Road Runner Rocket (RRR) program is a program to develop a family of small, solid propellant launch vehicles to launch 1,000-4,000 pound payloads to orbit. The RRR-1 is a two-stage rocket that is approximately 75 feet tall and 75 inches in diameter, and weighs approximately 100,000 pounds. The RRR-2 is a three-stage vehicle that is approximately 100 feet tall, 75 inches in diameter, and weighs approximately 200,000 pounds. The first stage of both vehicles is the ACME 99 motor; the second stage is the ACME 99a motor; the third stage on the RRR-2 is the ACME 49 motor. The major elements of support equipment include: electrical support equipment located in the launch pad utility room, electrical support box which is used as an interface between the vehicle and control center, back-up electrical power systems, mechanical support equipment to permit vehicle transportation and handling, air-conditioning equipment for the payload, and payload fueling equipment.

This program proposes to use Launch Complex 46 as the launch pad, and direct launch operations from a launch control center contained in a contractor-owned trailer.

1130 – TEST DESCRIPTION

The overall mission objective is to successfully launch a RRR-1 and RRR-2 launch vehicle, and place the respective payloads into low earth orbit.

1140 – TEST SCHEDULE

The Road Runner Rocket planned development schedule is depicted below:

	CY-15				CY-16				CY-17			
PHASES	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
1. Critical Design Review	X											
2. Program Introduction (PI)		X										
3. Fab, Assembly and test				X								
4. Program Req'ts Document					X							
5. Operations Req						X						
6. LC Safety Plan							X					
7. Flight performance analysis								X				
8. Flight readiness review									X			
9. First launch										X		

ACTIVITY PLAN:

	CY-15				CY-16				CY-17			
ITEM	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
1. Facility construction					X							
2. Pathfinder vehicle tests							X					
3. Launch preparations									X			
4. RRR-1 Launch										X		
5. RRR-2 Launch											X	

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1300 – TEST VEHICLE SYSTEM INFORMATION

1310 – TEST VEHICLE SYSTEM DESCRIPTION

First/Second/Third Stage:

The first stage assembly of the RRR-1 and RRR-2 consists of an ACME 99 solid rocket motor, the thrust vector control for the nozzle, electrical and ordnance subsystem components, and an external conduit. The second stage assembly of the RRR-1 and RRR-2 consists of an ACME 99a solid rocket motor, the thrust vector control for the nozzle, electrical and ordnance subsystem components, and an external conduit. The third stage of the RRR-2 consists of an ACME 49 solid rocket motor, the thrust vector control for the nozzle, electrical and ordnance subsystem components, and an external conduit. The ACME 99, ACME 99a, and ACME 49 motors use a graphite epoxy composite case, with class 1.3 hydroxyl terminated polybutadiene (HTPB) propellant. The nozzle is a carbon-carbon design. Thrust vectoring is provided by an electrical actuator powered by thermal batteries. Destruct ordnance is provided by a redundant linear shaped charge that penetrates the motor cylinder wall to the motor centerline.

Interstage:

The interstage section of the RRR consists of the composite interstage structure, and electrical and ordnance subsystems. The interstages also have access doors, which provide access to electrical components once the vehicle is erected at the launch pad.

Instrumentation Module:

The Instrumentation Module (IM) sits on the top of the missile stack, and contains guidance electronics, destruct system electronics, C-band transponders, telemetry system electronics, and associated cabling and batteries.

Payload Adapter:

The payload adapter is a conical structure that serves as an interface between the top stage and the mission payload. The adapter includes a mechanical interface to connect and separate the payload, as well as electrical interface cables to provide power to the payload, and provide telemetry of payload performance. The payload adapter also contains electronics that control the initiation of separation events.

Payload Fairing:

The payload fairing is 75” in diameter and 150” in height, and is the same type used previously on the ACME Coyote-1 launch vehicle. The fairing is separated into two equal halves by a mechanical separation device powered by electrically activated ordnance. Ports in the side of the fairing allow for the air-conditioning of the payload while the vehicle is on the launch pad.

ACME Transporter:

The ACME Transporter (AT) will be used to transport the launch vehicle from the launch processing building to the launch pad. The Transporter can carry the fully-assembled RRR-1 or RRR-2 vehicle in the horizontal position, then erect the vehicle into the vertical position on the launch stand. Once the vehicle has been erected at the launch site, the AT will be driven from the launch site and returned to the vehicle processing building.

Table A
Vehicle Information for RRR-1 and RRR-2

	RRR-1	RRR-2
Length (ft)	75	100
Diameter (in)	75	75
Width	N/A	N/A
Propulsion system	Stage 1:ACME 99 solid motor Stage 2: ACME 99a solid motor Electro-mechanical ACS	Stage 1: ACME 99 solid motor Stage 2: ACME 99a solid motor Stage 3: ACME 49 solid motor Electro-mechanical ACS
Guidance system	ACME laser-ring gyro IMU	ACME laser-ring gyro IMU
Launcher type	Fixed launch pad	Fixed launch pad
Explosive type	Stages 1-2: Class 1.3	Stages 1-3: Class 1.3
Max accel (g's)	10	9
CEP	<2%	<2%
Spin rate	N/A	N/A
Weight dry (lbs)	150,000	200,000
Weight launch (lbs)	150,000	200,000
Burn-out time (sec)	Stage 1: 60 sec Stage 2: 120 sec	Stage 1: 60 sec Stage 2: 120 sec Stage 3: 180 sec

Table B
Time Correlated Performance Data

Road Runner Rocket-1 (RRR-1)					
Event	Time (sec)	Altitude (ft)	Velocity (ft/sec)	Range (nm)	Acceleration (g's)
Stage 1 ignition	0.0	0.0	0.0	0.0	0.0
Stage 1 max accel	45.0	150,000	10,000	100	10
Stage 1 burnout	60.0	250,000	20,000	200	0.0
Stage 2 ignition	90.0	350,000	19,000	300	0.0
Stage 2 max accel	135.0	600,000	25,000	600	9.0
Stage 2 burnout	150.0	800,000	30,000	1,000	0.0
Road Runner Rocket-2 (RRR-2)					
Stage 1 ignition	0.0	0.0	0.0	0.0	0.0
Stage 1 max accel	45.0	130,000	8,000	800	9.0
Stage 1 burnout	60.0	225,000	16,000	160	0.0
Stage 2 ignition	90.0	320,000	15,000	240	0.0
Stage 2 max accel	135.0	500,000	20,000	480	8.0
Stage 2 burnout	150.0	650,000	25,000	800	0.0
Stage 3 ignition	180.0	700,000	24,000	900	0.0
Stage 3 max accel	225.0	750,000	28,000	1,000	7.0
Stage 3 burnout	240.0	750,000	30,000	1,200	0.0

1400 – TEST VEHICLE INSTRUMENTATION SYSTEMS:

Launch Vehicle Telemetry System

The RRR-1 and RRR-2 launch vehicles both use identical telemetry systems, with two S-band transmitters broadcasting 4 different data streams simultaneously from 8 antennas located around the circumference of the Instrumentation Module. The data streams are PCM NRZ-L at no greater than 2.0 Mbps per stream.

Transmitter characteristics:
Frequency: 2200 – 2300 MHz (specific frequencies will be negotiated with the range)
Power: 50W, peak
Manufacturer: ACME Electronics

Antenna Characteristics:
Design: Square microstrip patch, RH circ polarization
Gain: -5.0 dBic over 60% hemisphere
VSWR: 2:1
Manufacturer: ACME Antennas, Inc.

Tracking System

The RRR tracking system consists of a C-band transponder and four antennas mounted on the Instrumentation Module.

Transponder characteristics:
Frequency: 5690 MHz (receive)
5725 MHz (transmit)
Power: 500W, peak
Manufacturer: ACME Transponders, Inc.

Antenna characteristics:
Design: Spiral, RH circ polarization
Gain: -5.0 dBic over 60% hemisphere
VSWR: 2:1
Manufacturer: ACME Antennas, Inc.

Flight Termination System

The RRR flight termination system consists of redundant command receiver/decoders that receive signals via four redundant antennas located on the Instrumentation Module, and pass commands to redundant destruct interlock packages, which control redundant destruct firing units. The rocket motors are equipped with redundant linear shaped charges that penetrate the motor cylinder wall to the motor centerline.

Command receiver/decoder characteristics:
Frequency: 421.0 MHz
Manufacturer: Wiley Coyote Explosives, Inc.
Design/function: Complies with AFSPCMAN 91-710

Antenna characteristics:
Design/function: Complies with AFSPCMAN 91-710
Manufacturer: ACME Electronics, Inc.

1500 – CUSTOMER PROVIDED SUPPORT EQUIPMENT:

Only need to describe support equipment used on CCAFS

Road Runner Launch Van: [Provide description]

ACME Transporter: [Provide description]

Utility Room Equipment: [Provide description]

Access Tower Equipment: [Provide description]

Air Conditioning Carts: [Provide description]

Portable Clean Rooms: [Provide description]

Back-up Power Carts: [Provide description]

Mechanical Support Equipment: [Provide description]

1600 - SYSTEMS READINESS TESTS:

The following pre-launch readiness operations will be conducted by ACME Launch Industries, with support from 45 SW and 45 SW contractors, as required:

1) ACME 99 motor receipt and transport to processing facility
2) ACME 99a motor receipt and transport to processing facility
3) ACME 49 motor receipt and transport to processing facility
4) Interstage receipt and transport to processing facility
5) Instrumentation Module receipt and transport to processing facility
6) Payload fairing receipt and transport to processing facility
7) Assembly and check-out of vehicle
8) Transport of vehicle to launch site
9) Erection of launch vehicle
10) Payload receipt, processing and encapsulation
11) Transport and stack of encapsulated payload
12) Launch vehicle system tests and dress rehearsals
13) Launch readiness review
14) Launch operation

To verify systems readiness for launch, a series of systems and sub-systems level tests will be conducted. The following require direct support from 45 SW and 45 SW contractors:

1) Rocket motor receipt and transport – transfer of rocket motor stages from rail cars to truck; unloading of rocket motor stages at vehicle processing building
2) Vehicle transport to launch site
3) Communications system checkout – verification of all voice and data circuits required for flight
4) Flight termination system checkout – destruct system end-to-end tests
5) RF systems checkout – verification of vehicle telemetry, C-band transponder, and destruct RF
6) Mission rehearsal – All systems tested in a launch simulation
7) Launch operations – All systems

All assembly and test procedures will be presented to the 45 SW for review. Hazardous procedures will be submitted to 45 SW for review and approval.

A table is included of all launch and pre-launch activities, approximate durations, whether each task is considered hazardous.

Table C
Launch and Pre-Launch Activities

Task	Duration	Start	Haz	Comments
Receive and transport ACME 99 motor	4 hr	L-90 days	X	ITL area
Receive and transport ACME 99a motor	4 hr	L-89 days	X	ITL area
Receive and transport ACME 49 motor*	4 hr	L-88 days	X	ITL area

1800 - OPERATIONAL SAFETY HAZARD ISSUES:

An accident Risk Assessment Report will be provided to 45 SW/SE for review. A preliminary list of possible hazards are:

Item	Quantity	Possible Hazard	Mitigation Procedures
Solid propellant motors	2 ea: RRR-1 3 ea: RRR-2	Deflagration	
Stage separation charges	2 max	Ordnance Initiation	
Linear shaped charges	6 max	Ordnance initiation	
Thermal batteries	4 max	Ordnance initiation	
Pressure vessels			
Detonators			
Toxic materials			

2000 - TEST REQUIREMENTS/SUPPORT PLANS:

The RRR launch system will make extensive use of fiber optic cable for voice and data communications. ACME will provide a Signal Conditioning Box (SCB) to act as an interface to the range. Range support is requested to either provide fiber-optic connectivity to the SCS, or assist ACME Launch Industries to identify proper routing and allow installation of ACME-provided cables. Descriptions of the necessary cable connections are provided below:

SCB to control center:

Fiber #	Function	SCB	Control Center
1	LC46 Video #1		
2	LC46 Video #2		
3	Vehicle Telemetry A		
4	IRIG-B		
5	Area Warning Lights		
6	Pad Safety Switches		
7	Countdown net monitor		
8	Spare		

SCB to range:
The SCB acts as the pass-through for the range comm signals specified above. Physical connections have single fiber FC-PC type connectors mate the 9/125µm fibers to the interface panel.

Video Cameras to SCB:
Four ACME-provided video cameras are located at the launch site to transmit live video. The cameras are connected to the SCB via ACME-provided fiber, and no range support is required.

Area Warning Lights to SCB:
The area warning lights are connected to the SCB via ACME-provided fiber, and no range support is required.

2100 - METRIC DATA

METRIC MEASUREMENTS AND DATA REQUIREMENTS:

Metric measurements and timing of vehicle flight events are required as dictated for 45 SW/SE tracking. There are no user requirements.

2200 - TELEMETRY DATA

- The 45 SW is requested to receive RRR telemetry during pre-launch testing and during flight, and:
    - Provide telemetry data to control center trailer
    - Record telemetry streams on tape (format and media – TBD)
    - Provide near-real-time strip-chart print-outs of selected data channels
    - Verify the capability to extract and process specific vehicle information as required by 45 SW/SE
- Receipt and recording of telemetry data will be required from lift-off until final motor burn-out, and on-orbit during payload separation (time is TBD pending selection of payloads). Telemetry data is desired for as much of flight as possible, using existing range resources. Telemetry information on the following specific events is required:

Event	Time
Event 1	60.0 sec
Event 2	90.0 sec
Event 3	120.0 sec
Event 4	180.0 sec

Telemetry data from the Eastern Range shall be provided to the control center trailer as described in section 2000, TEST OPERATIONAL CONCEPTS/SUMMARIES, of this document.

2300 - COMMAND SYSTEMS

The range will be requested to broadcast Standard Decoder Standard Logic Sequence Tones as defined in AFSPCMAN 91-710 during pre-launch testing of the RR. The logic sequence is as follows:

Tone 8	Check Channel
Tone 17 & 19	Arm
Tones 9 & 10, followed by Tone 7, and removal of Tone 6	Destruct

Tones are to be broadcast at 421.0 MHz

Tests that require Standard Decoder Standard Logic Sequence tones include:

- Destruct guard receiver validation

- Command destruct RF subsystem test
- Final destruct end-to-end test
- Launch Countdown

2400 - TIMING

- IRIG signals will be required.
  - Timing signal required: IRIG-B
  - User equipment: Computer controlled time of day and countdown clocks
  - User supplied signals: Countdown time in IRIG-B

2600 - OTHER SYSTEMS

No other instrumentation systems are required for the RRR program.

2700 - COMMUNICATIONS

Telephone service will be required at the processing facilities, the control center trailer, and the launch pad. A minimum of five phone lines, one of which is data quality, is required at the rocket processing facility. Eight telephone lines, minimum, are required for the control center trailer. Four telephone lines, at least one of data quality, is required at the launch pad. Connections are also required between the control center trailer and the launch complex public address system.

OTHER:

Hand-held radios, cellular telephones, and personal pagers provided by ACME Launch Services shall be used by personnel during pre-launch and launch activities. The radios, ACME model 9999, operate at 150.00, 151.00, and 152.00 MHz and radiate 5 watts of power. The base station, an ACME model 8888, operates at the same frequencies with a power of 25 watts.

2800 - VIDEO

TELEVISION:

Closed circuit television is required for launch pad monitoring from the control center trailer during all test activities and hazardous operations, and countdown operations. The television system shall be capable of monitoring all launch pad activities and recording data, as necessary. The system shall be capable of transmitting real-time video to the control center trailer during launch operations.

3000 - REAL-TIME DATA DISPLAY / CONTROL

Real-time data displays will be required in the control center trailer. Real-time vehicle data from Launch Complex 46 will need to be transmitted to the control center trailer during countdown and dress rehearsal operations. The real-time display of flight trajectory and vehicle performance parameters in the control center trailer is also desired during flight.

3100 - PHOTOGRAPHY

DOCUMENTARY:

Video and still photography of vehicle ignition, lift-off, and flight is desired. Detailed requirements of camera type, locations, media, lens type will be provided at a later date.

ENGINEERING:

N / A

3200 - METEOROLOGY

Meteorological data will be required to determine if conditions are appropriate, or if pre-launch activities must be halted due to weather conditions. The data required for launch day are:

- Surface winds (50 and 100 ft)
- Winds aloft (5000, 10000 and 50000 ft)
- Temperature at launch area
- Cloud cover
- Visibility at the surface
- Solar flare activity

Daily weather predictions of temperature, surface winds, precipitation and lightning will be required for the duration of pre-launch activities. Complete weather predictions of all launch commit criteria will be required 24 hours prior to launch, with periodic updates, as required, prior to launch.

3300 - RECOVERY

Any recovery support required?

3400 - OTHER TECHNICAL SUPPORT

RANGE SHIPS AND AIRCRAFT:

NONE

TARGETS:

NONE

FREQUENCY CONTROL:

Frequency (MHz)	Type	Bandwidth	Power	Purpose
2200 – 2290 (two assigned frequencies)	Continuous signal during test or launch	TBD	50W, each	Launch vehicle telemetry
421.0	Continuous signal during test or launch	TBD	Range output	Flight termination signal
5690, 5765	Pulse	TBD	5690 – Range output; 5765 – 500 W	Tracking transponder
150.00, 151.00, 152.00	Intermittant	TBD	5W – handheld; 25W – base station	Radio communications. No frequency protection required – this is just notification to the range of frequency usage.

MISCELLANEOUS:

NOTAMS AND NOTICES TO MARINERS

4100 - DATA PROCESSING SPECIFICATIONS

Real-time plots and/or displays of launch vehicle telemetry data (approximately 40 channels) is desired for use by launch support personnel in the control center trailer. Post-launch review of an additional 40 channels of data is desired approximately one hour after launch. Specific channels, data rates, and link designations will be provided at a later date.

4130 - DATA COORDINATE SYSTEMS DESCRIPTION

Earth centered inertial reference system with the z-axis up through the North Pole, the x-axis pointing through zero degrees longitude and the y-axis to complete a right-handed coordinate system.

4200 - DATA DISPOSITION

Telemetry and photographic data shall be shipped to ACME Launch Industries, Inc. as soon as possible after completion of launch operations. Data delivery is required within 15 days of launch. A detailed data disposition plan will be provided to 45 SW at a later date.

5000 - BASE FACILITIES / LOGISTICS

N/A if not using CCAFS facilities

- Launch Complex 46 is the desired location to conduct launch operations. The facility will be made available through agreements with Space Florida. If LC 46 is not available for use, another launch pad will need to be provided which meets the following criteria: flat concrete pad – minimum dimensions 100’ x 100’, gantry or 75’ high scaffolding, electrical connections, potable water, and telephone service.

- A contractor owned control center trailer will be used for conducting launch operations, and monitoring operations at the launch complex during processing.

- Storage facility for rocket motors. Need environmentally controlled storage facilities rated for temporary storage of solid rocket motors (one ea – ACME 99, ACME 99a, and ACME 49). Storage will be needed for up to 90 days.

- Processing facility for launch vehicle. Need environmentally-controlled facility for processing of full-up launch vehicle. Minimum floor space required is 120’ long by 40’ wide. A 30’ x 30’ roll-up door is required for moving the vehicle on the transporter/erector. A 50-ton overhead crane is also desired. It is desired to install separation and destruct ordnance at this facility.

- Temporary office space. Temporary office space is required for 15 people during launch preparation. The facilities are desired to be fully furnished (desks, chairs, telephones, Internet connection). Office space is requested to be as close to the processing facility and launch pad as possible.

- A site to store non-hazardous handling equipment is required. An uncovered parking lot is sufficient. The area required is 100’ x 100’.

- Payload processing facilities will be required. Requirements will be provided when payloads are assigned.

5100 - PERSONNEL ASSIGNMENT SCHEDULES:

N/A if not processing/launching on CCAFS

All personnel working on the ACME RRR launch program will be contractor personnel. There will be no permanent personnel assigned to CCAFS. Approximately 35 personnel will be temporarily deployed to CCAFS for launch preparations. The personnel will report to CCAFS approximately 90 days prior to launch, and will depart the base approximately 7 days after launch.

A break-out of personnel are as follows:

Administrative: 15 persons
Technicians: 20 persons

5200 – TRANSPORTATION

Facilities will be required to accommodate the transportation of vehicle motors, components and test equipment via rail, air and road.

RRR Components will be shipped using the following methods:

		Contractor-supplied			45 SW-supplied		
Item	Event	Truck	Forklift	Crane	Truck	Forklift	Crane
ACME 99, 99a, 49 motors	Unload rail cars at ITL area; transport to storage	X					X
ACME 99, 99a, 49 motors	Transport motors from storage to processing bldg	X					X
Interstage, Instrumentation module	Unload from aircraft; transport to storage	X				X	
Payload fairing	Truck to storage	X					
RRR vehicle	Transport to launch pad	X					
RRR vehicle	Erect vehicle at launch site	X					
Payload	TBD per customer requirements						

The forklift should be rated to 25KLBS.

Two different mobile cranes will be required – one rated to 100KLBS and 10ft hook height, and one rated to 25KLBS and a 100 ft hook height.

Bus transportation will also be required for up to 100 visitors on launch day.

5300 - SERVICES

N/A if services are provided on KSC by KSC contractors

5310 – SERVICES - ADMINISTRATIVE, PERSONNEL, AND OFFICE

Office space for 15 personnel (including desks, chairs, telephones, Internet connection) in proximity to launch processing building.

5311 – SERVICES – FIRE AND RESCUE

General fire-fighting and rescue services will be required, in addition to special protection during launch operations. Emergency medical services must be available during all phases of operations at CCAFS.

5312 – SERVICES - MEDICAL

Emergency rescue, first aid and transportation to local hospital in case of worker injury or serious illness.

5313 – SERVICES - PUBLIC AFFAIRS

Coordinate and approve press releases dealing with RRR launch activities at Cape Canaveral AFS. Support for up to 100 visitors on launch day, and VIP support for up to five dignitaries at governor /congressional level (when appropriate).

Bleachers requested to support launch viewing on launch day. Location of bleachers to be determined by 45 SW and 45SW/SE.

5314 – SERVICES - SECURITY AND SAFETY

- Security for launch complex, processing building and payload processing (as required)
- Pass & ID services for processing personnel (35), and launch day guests (up to 100)
- Support from 45 SW safety office as required under AFSPCMAN 91-710

5315 – SERVICES - COMMUNITY, EDUCATION AND FOOD SERVICE

NONE

5320 – SERVICES - UTILITIES (ELECTRICAL, WATER, AND SANITATION)

- 110 volt, 60 Hz electrical power and potable water at processing facility, launch pad and office space
- Environmental control required for processing facility and offices
- Janitorial services, trash pick-up, pest control, building maintenance, and grounds maintenance required at all facilities
- Port-a-johns will be required at Launch Complex 46 during launch pad operations, and at the launch viewing site on launch day (bleachers requested at launch site in SECTION 5300 – SERVICES, OTHER.

5321 – SERVICES - HANDLING, STORAGE AND DISPOSAL

Receipt and handling of hazardous propellants for payloads will be required. Amount and type of propellants is TBD pending payload selection.

Receipt, storage and handling of the following ordnance/explosive devices:

Separation linear shaped charge	3 maximum
Low voltage initiators	14 maximum
Detonators	16 maximum

All items under UN code 1.1, DOT hazard class C explosives. Storage of ordnance will require temperature and humidity control.

5330 – SERVICES - PROCUREMENT, SHIPPING, RECEIVING, AND STOCK CONTROL

N/A

5340 – SERVICES - PROPELLANTS, GASES, AND CHEMICALS

TBD amounts of GN_2 and GHe will be required for processing the vehicle.

5341 – SERVICES – FUELS, LUBRICANTS, HYDRAULIC FLUIDS, ETC:

TBD

5342 – SERVICES - CHEMICAL CLEANING:

TBD

5350 – SERVICES - VEHICLES

Specified in section 5200, Transportation

5351 – SERVICES - GROUND HANDLING EQUIPMENT

A forklift (25KLB) and two mobile cranes (100KLB, 10 ft hook height; and 25KLB, 100 ft hook height) will be required.

5360 – SERVICES - AIRCRAFT

Contractor aircraft will be used to deliver flight hardware to Skid Strip at CCAFS.

5400 - LABORATORY

N/A if services are provided on KSC or by KSC contractors

5440 – LABORATORY - TECHNICAL SHOPS AND LABS:

Precision cleaning of small parts may be required, as well as calibration of some tooling.

5500 - MAINTENANCE:

N/A if services are provided on KSC or by KSC contractors

Facility maintenance required for all facilities assigned to ACME Launch Industries during launch preparations, including janitorial services, trash pick-up, pest control, building maintenance, and grounds maintenance.

5600 - FACILITIES

N/A if required facilities are on KSC property

	CY-15				CY-16				CY-17			
ITEM	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
1) Launch Complex 46											X	X
2) Motor storage facility							X	X	X	X	X	X
3) Missile processing facility										X	X	X
4) Office space										X	X	X
5) Payload processing facility												X

LOCATION:

Processing and storage facility locations TBD

DESCRIPTION:

Launch Complex 46 is the desired location to conduct launch operations. The facility will be made available through agreements with Space Florida. If LC 46 is not available for use, another launch pad will need to be provided which meets the following criteria: flat concrete pad – minimum dimensions 100’ x 100’, gantry or 75’ high scaffolding, electrical connections, potable water, and telephone service.

A contractor owned control center trailer will be used for conducting launch operations, and monitoring operations at the launch complex during processing.

Storage facility for rocket motors. Need environmentally controlled storage facilities rated for temporary storage of solid rocket motors (one ea – ACME 99, ACME 99a, and ACME 49). Storage will be needed for up to 90 days.

Processing facility for launch vehicle. Need environmentally-controlled facility for processing of full-up launch vehicle. Minimum floor space required is 120' long by 40' wide. A 30' x 30' roll-up door is required for moving the vehicle on the transporter/erector. A 50-ton overhead crane is also desired. It is desired to install separation and destruct ordnance at this facility.

Temporary office space. Temporary office space is required for 15 people during launch preparation. The facilities are desired to be fully furnished (desks, chairs, telephones, Internet connection). Office space is requested to be as close to the processing facility and launch pad as possible.

A site to store non-hazardous handling equipment is required. An uncovered parking lot is sufficient. The area required is 100' x 100'.

Payload processing facilities will be required. Requirements will be provided when payloads are assigned.

6000 - OTHER SUPPORT:

45 SW and supporting contractor personnel will be required to support the following activities:

- Range safety review of flight hardware
- Range safety review of hazardous operations
- FTS qualification
- C-band beacon qualification
- Range scheduling

========== End of Document ==========